

plate 23, figure 162." The collection contains a specimen with the following labels: "No. 295b See F. Knab's Entom. notes/Tehuantepec, Oax. Mex./See slide No. 330/Type No. Restrict U.S.N.M. Dyar 1921 [red]/philosoph." Slide No. 330 is labeled "philosophicus D. & K. Type." The original description is of the larva alone, but the only immature material of this type series under no. 295b consists of 1 fragmentary larval skin and 6 pupal skins. These have been mounted on a slide. All 6 adults from these pupae are in the collection, 5 males and 1 female. Since only the larva was originally described, one must consider the fragmentary larval skin under no. 295b as the lectotype. Under Knab's number 295 this was the only larva collected, all the other collections being pupae from which adults were reared.

Haemagogus regalis Dyar and Knab, Proc. Biol. Soc. Washington 19: 167. 1906.

Of the original 22 specimens, 17 are now in the collection. Only one of these bears the red U.S.N.M. label and we consider it the holotype. It also bears the labels "No. 330v See F. Knab's Entom. notes/Sonsonate, Salv./Slide 36.I.Sb/Haemagogus regalis D. & K. Type [Dyar's handwriting]." It is a male with the genitalia mounted on a slide and the pupal skin and fragmentary larval skin on another slide.

Haemagogus uriartei Shannon and Del Ponte, Rev. Inst. Bact. 5: 68. 1927.

The collection contains a male bearing the

labels "Ins. Bac. Ent. nota 128-3/Vipos, Tuc. 4.II.27/2353/Type No. U.S.N.M. [red]/Haemagogus uriartei Sm & D P [Shannon's handwriting]." The original reference gives "Distribución: Tucumán (Vipos, 22.3.27; Shannon y Del Ponte, localidad del tipo." Since the authors refer to one male reared from a larva collected in Vipos, the difference between the published date and the date on the label may be due to the difference in times of collection of the larva and emergence of the adult. The genitalia are mounted on slide No. 2353 and what is probably the pupal skin of the type on a slide labeled "Pupa V3 Vipos 4.II.27 Haemago." There is also a female (Raco, 13.2.27) from the original series in the collection. We consider the male to be the holotype.

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ENTOMOLOGY.—*New apterous Aradidae from Puerto Rico (Hemiptera)*. CARL J. DRAKE, Iowa State College, and J. MALDONADO-CAPRILES, University of Puerto Rico.

(Received May 27, 1955)

Very little is known relative to the aradid fauna of Puerto Rico. Barber (1939, pp. 329-330) recorded two genera, each represented by a single species, from the island. These species were *Mezira abdominalis* (Stål) from Mayagüez and Hispaniola and *Aneurys minutus* Bergroth from Adjuntas. Fifteen years later, Harris and Drake (1944, pp. 130-131) described a new genus and new species of an apterous aradid as *Eretmocoris tatei* from a male specimen taken at Lares.

The present paper contains data on three genera and four species of Aradidae, includ-

ing the characterization of one new genus and two new species of apterous aradids. As adults are needed for their identification, the records do not include these two genera, each represented by nymphal stages, taken in forest litter near Mayagüez by means of a Berlese funnel. The two forms heretofore listed in the literature are as follows: *Aneurys minutus* Bergroth, two adults and one last instar nymph, found under loose bark of a tree, Yaucó, March 5, 1955; and *Eretmocoris tatei* Harris and Drake, Mayagüez, March 5, 1955, taken by means of a Berlese funnel from forest litter on the

ground. Field records for the new species are given under their respective descriptions. The types of the new species are in the Drake Collection, paratypes in the collections of both authors.

In order to facilitate future work and to clarify generic characters, the following genotypes of described species have been illustrated: *Eretmocoris tatei* Harris and Drake, type (male); *Acaricoris ignotus* Harris and Drake, type (female); *Glyptocoris sejunctus* Harris and Drake, type (male); *Asterocoris australis* Drake and Harris, type (male); and *Allelocoris dryadis* Drake and Harris, type (male), all illustrated by Mrs. Margaret Poor Hurd. The figures of the two new species described below were made by J. Maldonado-Capriles.

***Eretmocoris disparis*, n. sp.**

Apterous, obovate, widest behind middle of abdomen, considerably narrowed anteriorly, very little narrowed behind, reddish fuscous, prominently sculptured; mesonotum at middle fused with metanotum; metanotum fused with first two abdominal tergites, the rest of abdominal tergite (save seventh, but not connexiva) fused. Abdominal stigmata all lateral. Female broader than male. Length, 3.20–3.50 mm; width, 1.30–1.70 mm.

Head longer on median line than width across eyes (54:46), obliquely narrowed behind eyes, with fairly large neck, with prominent median longitudinal ridge, furrowed on each side of ridge; tylus convexly longitudinally raised, prominent;



FIG. 1.—*Eretmocoris disparis*, n. sp. (head).

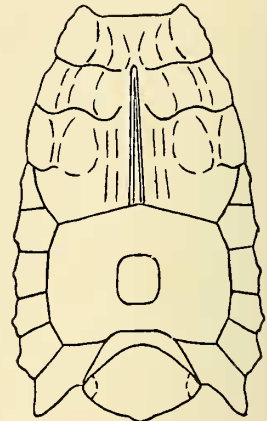


FIG. 2.—*Eretmocoris disparis*, n. sp. (body, dorsal aspect).

juga a little longer than tylus, the parts surpassing tylus divergent, rounded, with blunt tips. Antenniferous tubercles quite large, divergent, cone-like. Antennae rather short, twice as long as head (94:46), finely granulate, each minute granule beset with a short, inconspicuous, fine hair, basal segment much thicker and much longer than others, measurements—I, 32; II, 18; III, 22; IV, 22. Rostrum dark fuscous, not quite attaining apex of sulcus; sulcus broad, deep, not extending to base of head.

Pronotum wider at base than width across eyes (75:46), only a little wider in front (52:46); mesonotum wider than pronotum, subequal in length, fused at middle with metanotum; metanotum fused with first two abdominal tergites, the triangular median part of both mesonotum and metanotum longitudinally carinate, the median carina longer and slightly more elevated than lateral ones, the latter convergent anteriorly. Metasternal orifice visible from lateral aspect. Legs rather short, plain, fuscous to dark fuscous. Abdomen with the fused dorsal tergites almost quadrate in outline, with a definite pattern of impressions and ridges, the glandular area prominent; seventh tergite not fused, similar to *E. tatei* in shape. Abdomen above without hairs, with all spiracles visible from above. Legs dark brownish to dark fuscous, inconspicuously pubescent.

Type (male) and *allotype* (female), Mayagüez, Puerto Rico, March 1955, collected by means of a Berlese funnel from ground litter in forest. *Paratypes*: 4 specimens, taken with type. Also 4 or 5 nymphs of *E. disparis* and nymphs of two alate species of aradids were found in the same batch of litter.

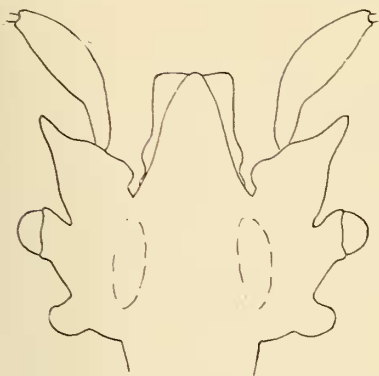


FIG. 3.—*Aglaocoris natalii*, m. sp. (head).

Differs from *E. tatei* Harris and Drake by form of body (slowly roundly narrowed anteriorly; pronotum narrower than tergite VII), and the appendages inconspicuously pubescent. In *tatei* (Fig. 1), the body is obovate and the appendages distinctly beset with short, pale, setal pubescence. The two species are not readily confused.

Aglaocoris, n. gen.

Apterous, oblong, broad, with dorsal surface coarsely punctate, irregularly rugulose, the abdomen with regular patterns of impressions and ridges. Head subquadrate, jugs and tylus subequal in length; eyes small, distinctly stylate, each placed on the outer end of a lateral pedicel; each side of head with a postocular tubercle placed about half way between an eye and the neck. Collar distinct, short and rather narrow. Antenniferous tubercles large, divergent, terminating anteriorly in a fingerlike projection. Antennae rather short, fairly slender, indistinctly pubescent; segment I stout, slightly bent, extending more than half its length beyond apex of juga, much longer and much stouter than other segments; segments II and IV subequal in length, III slenderest, slightly shorter (subequal, including nodular segment). Legs rather short, plain. Abdomen convex beneath. Pronotum much wider than head across eyes, not fused, free; mesonotum a little wider than pronotum, also feebly extended laterally but not lobate, partly fused at middle with metanotum; metanotum fused behind with first tergite (judging from last instar nymph, also second tergite); abdomen with tergites III to VI fused into a quadrate area, with dorsal glandular organ prominent; seventh tergite not fused; connexiva fairly wide, with segments IV to VII distinct, the anterior segments fused. Stigmata on VI, VII and VIII (genital segment)

lateral, V sublateral (partly visible from above), and II, III and IV a little removed from outer edge and thus not visible from dorsal aspect (each more progressively removed anteriorly). Spiracles VII and VIII placed on small projections.

Genotype, *Aglaocoris natalii*, n. sp.

Two other American genera of apterous Aradidae have the eyes pedicellate—*Asterocoris* Drake and Harris and *Allelocoris* Drake and Harris. *Aglaocoris* may be distinguished from both of these genera by the much shorter legs and antennae (antennal segment I much longer than any other), tylus and gula subequal in length, body without lateral lobes or fingerlike projections, head with postocular tubercle on each side, metanotum fused with first two abdominal tergites, the rest of tergites (except VII) fused together, and the position of abdominal spiracles.

Aglaocoris natalii, n. sp.

Large, broad, blackish ferruginous, without vestiture on dorsal surface; legs beset with short, pale, setal hairs; antennae with short, pale, pubescent hairs, the pubescence slightly longer and more setose on first segments. Length, 5.50–6.10 mm; width, 2.70–3.00 mm. Female wider than male.

Head slightly wider across eyes than median

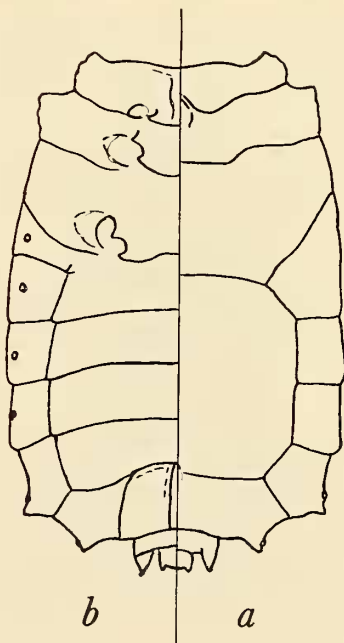


FIG. 4.—*Aglaocoris natalii*, n. sp. (a, dorsal; b, ventral).



FIG. 5.—*Eretmocoris tatei* Harris and Drake (type).

length (115:110); ocular pedicel moderately large, the eyes fairly prominent; postocular pedicel shorter, knoblike, not as thick, placed about midway between an eye and neck, more densely setose than other parts of head. Antennae rather short; segment I much stouter and longer than others, III thinnest and practically as long

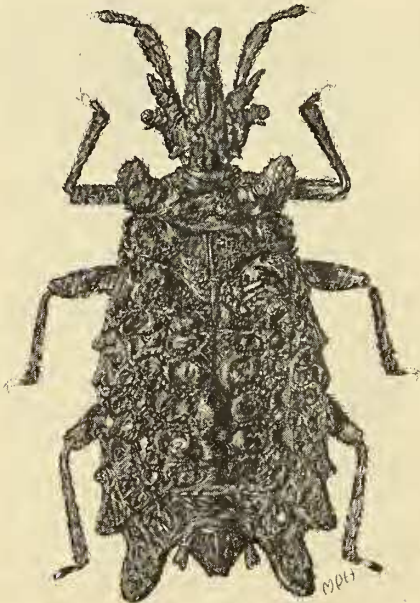


FIG. 6.—*Allelocoris dryadis* Drake and Harris (type).

as II (including modular segment); measurements—I, 48; II, 29; III, 28; IV, 30. Rostrum stout, ferruginous, almost as long as channel; mandibular and labial stylets (when fully extended) reaching almost to end of abdomen.

Pronotum short, much wider than head across eyes (105:150); mesonotum slightly wider than pronotum, with outer margins slightly extended, with a large median carina, partly fused with metanotum; metanotum fused with first two abdominal tergite, the rest of abdominal tergites (save seventh) fused into a subquadrate area.

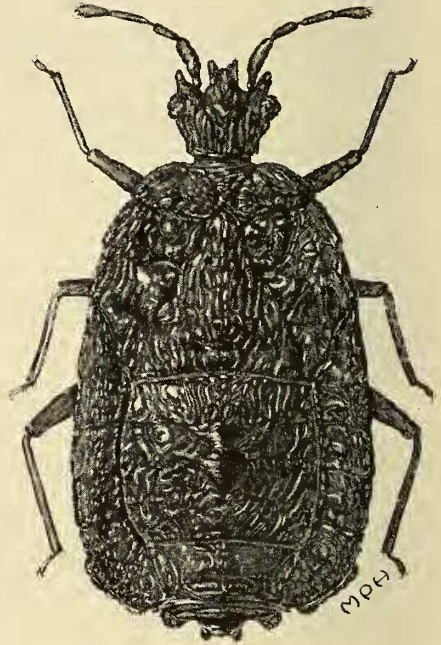


FIG. 7.—*Acaricoris ignotus* Harris and Drake (type).

Connexiva segmented, the anterior three fused. Entire dorsal surface coarsely punctate, the venter with smaller punctures; abdominal tergites with a definite pattern and arrangement of impression and ridges; stigmata of seventh and eighth segments placed on small projections, the seventh segment with a prominent, smooth, subconelike projection beneath each projection bearing a spiracle. In all comparative measurement, 80 units equal one millimeter.

Type (male) and *allotype* (female), Yauco, Puerto Rico, under loose bark of a tree, March, 1955, collected by Antonio Natali, after whom the insect is named. *Paratypes*: 60 specimens,

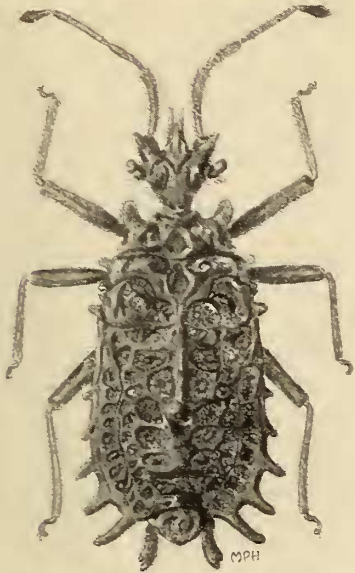


FIG. 8.—*Asterocoris australis* Drake and Harris (type).

taken with type, and from Mayagüez, April 1955, also under loose bark of a dead tree. Some large nymphs were also taken with the adults.

An examination of last instar nymphs indicates that the metanotum is fused with both first and second abdominal tergites. The first two basal ventrites are also fused. The other two species of

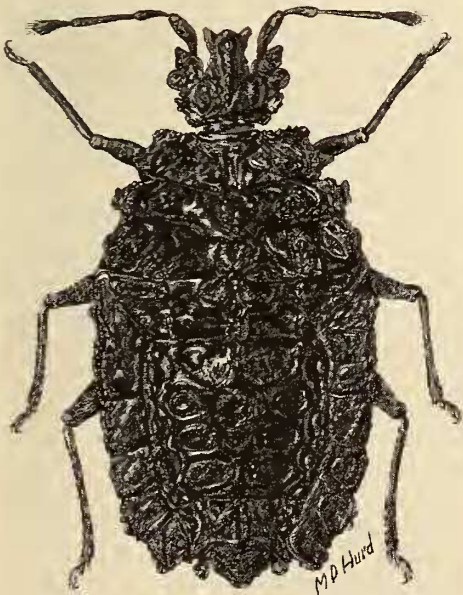


FIG. 9.—*Glyptocoris sejunctus* Harris and Drake (type).

apterous aradids found in Puerto Rico (*E. tatei* and *E. disparis*) are much smaller, eyes not stalked, and all spiracles are lateral. The discussion under the generic description distinguishes *A. natalii* from the South American apterous aradids having pedicellate eyes.

GENERA AND SPECIES OF AMERICAN
APTEROUS ARADIDAE

The following checklist enumerates the genera and species of apterous aradids listed in the literature. It should be noted that *Acaricoris brasiliensis* Wygodzinsky (1948), *A. teresonolitana* Wygodzinsky (1948) and *Emydocoris usingeri* Wygodzinsky (1948) have been transferred recently by Kormilev (1953) to the genus *Pictinus* Stål.

Family ARADIDAE Costa, 1843

Subfamily MEZIRINAE Oshanin, 1908

Tribe CARVENTINI Usinger, 1941

Genus ACARICORIS Harris and Drake, 1944

Type, *Acaricoris ignotus* Harris and Drake

1. **ignotus** Harris and Drake, 1944: United States (La., Miss., Ga.).

Genus AGLAOCORIS Drake and Maldonado, 1955

Type, *Aglacoris natalii* Drake and Maldonado

2. **natalii** Drake and Maldonado, 1955: Puerto Rico.

Genus ALLELOCORIS Drake and Harris, 1944

Type, *Allelocoris dryadis* Drake and Harris

3. **dryadis** Drake and Harris, 1944: Brazil.

Genus ASTEROCORIS Drake and Harris, 1944

Type, *Asterocoris australis* Drake and Harris

4. **australis** Drake and Harris, 1944: Brazil.

5. **schubarti** Wygodzinsky, 1948: Brazil.

Genus DIHYBOGASTER Kormilev, 1953

Type, *Dihybogaster incrustatus* Kormilev

6. **incrustatus** Kormilev, 1953: Brazil.

Genus EMYDOCORIS Usinger, 1941

Type, *Emydocoris testudinatus* Usinger

7. **testudinatus** Usinger, 1941: Brazil.

Genus ERETMOCORIS Harris and Drake, 1944

Type, *Eretmocoris tatei* Harris and Drake

8. **disparis** Drake and Maldonado, 1955: Puerto Rico.

9. **tatei** Harris and Drake, 1944: Puerto Rico.

Genus GLYPTOCORIS Harris and Drake, 1944

Type, *Glyptocoris sejunctus* Harris and Drake

10. **annulatus** Kormilev, 1953: Brazil.

11. **confusus** Kormilev, 1953: Brazil.

12. **espiritasantensis** Wygodzinsky, 1948: Brazil.

13. **fluminensis** Wygodzinsky, 1948: Brazil.

14. **milleri** Wygodzinsky, 1948: Brazil.

15. **plaumanni** Kormilev, 1954: Brazil.

16. *sejunctus* Harris and Drake, 1944: Brazil.
Genus NOTOPLOCORIS Usinger, 1941
Type, *Notoplocoris montei* Usinger
17. *mendesi* Wygodzinsky, 1948: Brazil.
18. *montei* Usinger, 1941: Brazil.
19. *potensis* Drake and Harris, 1944: Brazil.
20. *sobrali* Wygodzinsky, 1948: Brazil.
Tribe MEZIRINI Usinger, 1941
Genus PICTINUS Stål, 1873
Type, *Pictinus cinctipes*, Stål
21. *brasiliensis* (Wygodzinsky), 1948: Brazil.
22. *dureti* (Kormilev), 1953: Argentina.
23. *intermediarius* (Kormilev), 1953: Brazil.
24. *montrouzieri* Kormilev, 1953: Brazil.
25. *plaumanni* Kormilev, 1953: Brazil.
26. *teresopolitanus* (Wygodzinsky), 1948: Brazil.
27. *usingeri* (Wygodzinsky), 1948: Brazil.

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ZOOLOGY.—*Remarkably preserved fossil sea-pens and their Recent counterparts.*

FREDERICK M. BAYER, U. S. National Museum.

(Received May 23, 1955)

The material to be described below, including as it does specimens of Recent and Tertiary pennatulaceans showing close morphological similarity, is indeed remarkable. It is even more so in view of the fact that the sea-pens in question are soft-bodied creatures that do not lend themselves to fossilization. The Recent material, four lots containing in all seven specimens, was collected in the Gulf of Mexico by the vessels *Albatross*, *Grampus*, and *Pelican*, and by C. T. Reed. The interesting suite of fossils from the Tertiary of Trinidad, collected by Dr. H. G. Kugler of Pointe-à-Pierre, was submitted to me for study by Dr. W. P. Woodring of the U. S. Geological Survey. Photographs of some of the specimens had earlier been sent by Dr. Kugler to Dr. Fred B. Phleger, who suggested that they might represent molds of some pennatulacean. This suggestion, passed along to Dr. Woodring, resulted in my seeing the photographs and, eventually, the specimens themselves. Subsequently, Dr. Kugler visited the Basel (Switzerland) Museum and arranged for similar fossils housed in that institution to be sent to me for con-

sideration with the material from Trinidad. The specimens from the Basel Museum were collected in the Kei Islands, from a stratum of undetermined age.

I am greatly indebted to Dr. Woodring for the opportunity of seeing the fossil material and for arranging its transmittal to me. Needless to say, this study could not have been made but for the kindness of Dr. Kugler, collector of the Trinidad specimens. Dr. G. Arthur Cooper, curator of the Division of Invertebrate Paleontology, U. S. National Museum, made the excellent photographs reproduced on Fig. 2, for which I express sincere thanks. In the preparation of the specimens for study I have been greatly assisted by M. L. Peterson, Jr., of Arlington, Va., who has done the necessary cutting.

Except for *Cancellophycus* from the Lias, Jurassic and Cretaceous, as reported by Lucas (1938, 1940), pennatulacean octocorals are known in the fossil state only by their calcareous axes. Several genera have been erected for these fossils, and at least one "species" has been assigned to the Recent genus *Pavonaria* (= *Balticina*). It is,